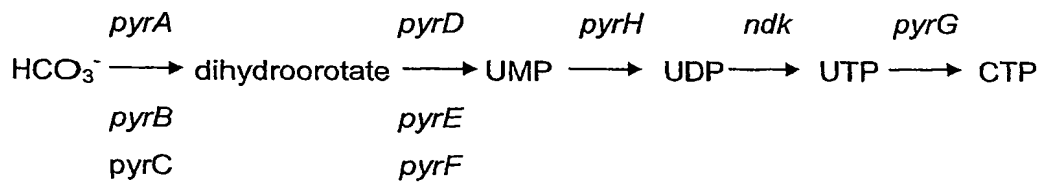


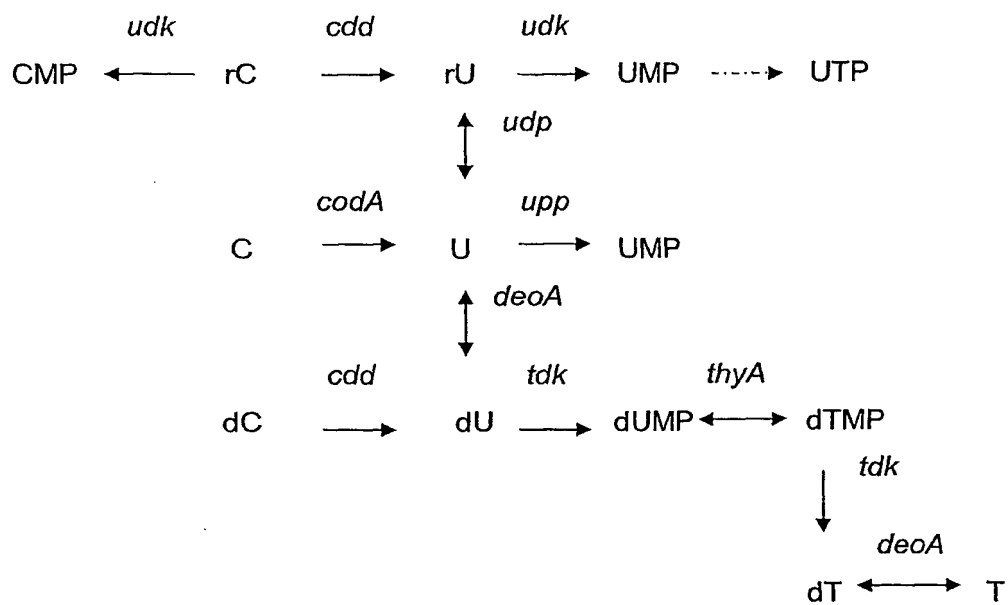
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Figure 1a: Diagram of the “*de novo*” route of UTP and CTP in *E. coli*

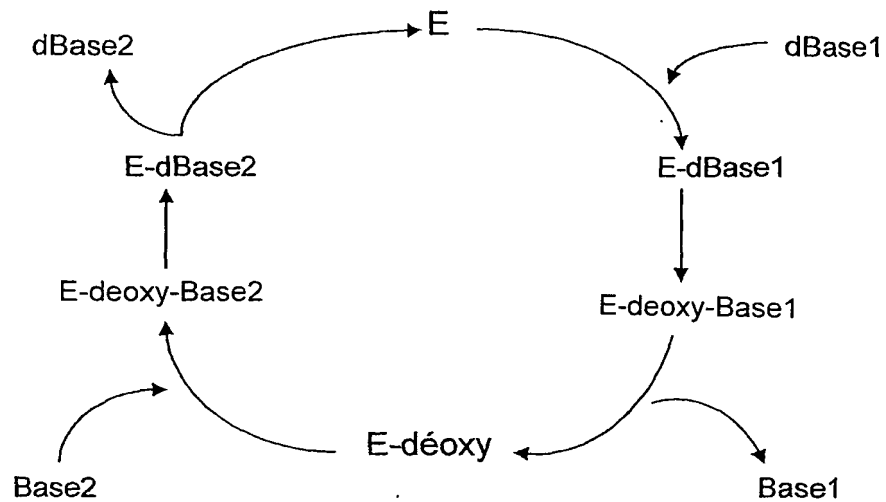


2/4

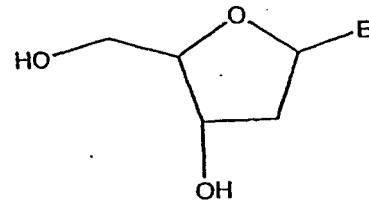
Figure 1b: Recycling route of the pyrimidines in *E. coli*



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*E-deoxy = enzyme-deoxyribose complex with the form]
(E = active site of the enzyme)



* dBase = deoxyribonucleotide

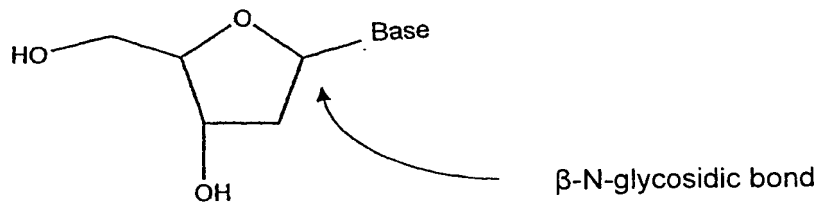


FIGURE 2

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CLUSTAL W (1.8) multiple sequence alignment

13

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NTDLh      MNKKKTLYFGAGWFNEKQNK--YKEAMAALKENPTVDLENSYVPLENQYKGIRI
NTDLa      MMAKTKTLYFGAGWFNEKQNK--YKAAMEALKQNPVDLENSYVPLENQYKDIRV
NTDLj      MAGWFTETQNK--YKDAMSALNANPTIDLENSYVPLQNQYKDIRV
NTDLl      MPKKTIIYFGAGWFTDRQNK--YKEAMEALKENPTIDLENSYVPLDNQYKDIRV
NTDLf      LKNTDPVANTKIYLATSFNEEQRR--IPQALAQLEANPTVGVVH--QPFDFQYKDARV
PTDLh      MKAVVPTGKIYLGSPFYSDAQRE--AAKAKELLAKN--LSIAHVFFPFDDGFTDPDE
NTDLmATCC8293  MSQIYLAGPFFSDEQIDR--VKRIEAAALDSN-----PTVTDYYSRPR
ProMar      MTRKIIYLASPYGFSKQCKKNLLPEFIAALEDLG-----AEVWPEFSR

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77

97 103

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NTDLh      DEHPEYLH-NIEWASATYHNDLVGIKTSDVMLGVYLP--EEEDVGLGMELGYALSQGKYI
NTDLa      DEHPEYLH-DIEWASATYHNDLIGIKSSDIMLGVIYP--EEEDVGLGMELGYALSQGKYI
NTDLj      DEHPEYLH-DKEWAQATYNGDLVGIKTSDVMLGVYVP--KEEDVGLGMELGYAMSQGYV
NTDLl      DEHPEYLH-DKVWATATYNNDLNGIKTNDIMLGVIYP--DEEDVGLGMELGYALSQGKYV
NTDLf      DSDPAGVFGSLEWQIATYNNDLNAVGTSDVCVALYDM--DQIDEGICMEIGMFVALHKPI
PTDLh      KNPEIGGIRSMVWRDATYQNDLTGISNATCGVFLYDM--DQLDDGSAFEIGEMRAMHKPV
NTDLmATCC8293  HQKTENPEFTSPWAAEVFQDRIKNVTDADIILSIIDYRDNDADSGTAFEQGMAWVQKKPI
ProMar      NAQYENLQ--PGWAHDIALADLRDVRNSDGILAVVNG--TPPDEGVMIELGAALALGKPT

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132

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NTDLh      LLVIP-----DED-YGKPINLMSWGVCDNAIK----ISELKDFDFNKPRYN-FYDGAVY
NTDLa      LLVIP-----DED-YGKPINLMSWGVCDNAIK----ISELKDFDFNKPRFN-FYDGAVY
NTDLj      LLVIP-----DEL-YGESINLMSWGVADNVIK----MSELATFDFNRPRYN-FYDGAVY
NTDLl      LLVIP-----DED-YGKPINLMSWGVSDNVIK----MSQLKDFNFKPRFD-FYEGAVY
NTDLf      VLLPFTTK---DKSAYEA--NLMLARGVTTWLEPN-DFSPLKDFNFNHPMAQPPFPKVF
PTDLh      ILVPFTEH---PEKEKKM--NLMLAQGVTTIIDGNTEFEKLADYNFNECFNPNVRGYGIY
NTDLmATCC8293  IVFN-----ELKFPV--NLMLSESLTAYITN---SDDIATYDFDQTPKLPFTG-ELF
ProMar      FLFRDDFRRCSDSEYPL--NLMLFAGLPSIGWNDYFYTSIEELSDPKKSLAIWLKD---

```

Figure 3